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distinguished from all other Saurians. Thus *Hatteria* presents a strange combination of elements of high and low organization, and must be regarded as the type of a distinct group. Its affinities and systematic position may be indicated in the following synopsis of RECENT REPTILIA :—

I. *SQUAMATA*.

First order. *Ophidia*.

Second order. *Lacertilia*.

Suborder A. *Amphisbænoidea*.

Suborder B. *Cionocrania*.

Suborder C. *Chamæleoidea*.

Suborder D. *Nyctisaura*.

Third order. *Rhynchocephalia*.

II. *LORICATA*.

Fourth order. *Crocodylia*.

III. *CATAPHRACTA*.

Fifth order. *Chelonia*.

IV. "On the Curves which satisfy given conditions." By Prof. CAYLEY,
F.R.S. Received April 18, 1867.

(Abstract.)

The present memoir relates to portions only of the subject of the curves which satisfy given conditions; but any other title would be too narrow: the question chiefly considered is that of finding the number of the curves which satisfy given conditions; the curves are either curves of a determinate order r (and in this case the conditions chiefly considered are conditions of contact with a given curve), or else the curves are conics; and here (although the conditions chiefly considered are conditions of contact with a given curve or curves) it is necessary to consider more than in the former case the theory of conditions of any kind whatever. As regards the theory of conics, the memoir is based upon the researches of Chasles and Zeuthen, as regards that of the curves of the order r , upon the researches of De Jonquières: the notion of the quasi-geometrical representation of conditions by means of loci in hyper-space is employed by Salmon in his researches relating to the quadric surfaces which satisfy given conditions. The papers containing the researches referred to are included in a list subjoined. I reserve for a separate second memoir the application to the present question, of the Principle of Correspondence.